

What is claimed is:

CLAIMS

- 5 1. An apparatus, comprising:
- an integrated circuit capable of receiving an input/output (I/O) request to write data stored on at least one target device comprised in at least one local storage array, said integrated circuit further capable of generating one or more I/O transactions capable of writing data on at least one target device comprised in at least one remote storage array.
- 10 2. The apparatus of claim 1, wherein:
- said integrated circuit is further capable of generating one or more I/O transactions capable of writing data stored on said at least one target device comprised in said at least one local storage array.
3. The apparatus of claim 1, wherein:
- 15 said local storage array and said remote storage array each comprise a redundant array of inexpensive disks (RAID) each comprising RAID Level 1 storage arrays.
4. The apparatus of claim 3, wherein:
- said one or more I/O transactions capable of writing data on at least one target device comprised in at least one remote storage array comprises a transaction to mirror
- 20 data on said RAID Level 1 storage array in response to said I/O request to write data stored on at least one target device comprised in at least one local storage array.
5. The apparatus of claim 1, wherein:

said local storage array and said remote storage array each comprise a redundant array of inexpensive disks (RAID) each comprising at least one of RAID Level 0, RAID Level 10 and RAID Level 1E storage arrays.

6. The apparatus of claim 5, wherein:

5 said one or more I/O transactions capable of writing data on at least one target device comprised in at least one remote storage array comprises a transaction to stripe data on at least one of said RAID Level 0, RAID Level 10 and RAID Level 1E storage arrays in response to said I/O request to write data stored on at least one target device comprised in at least one local storage array.

10 7. The apparatus of claim 1, wherein:

said integrated circuit further capable of receiving an input/output (I/O) request to read data on at least one target device comprised in at least one local storage array, said integrated circuit further capable of generating one or more I/O transactions capable of reading data on at least one target device comprised in at least one remote storage array.

15 8. A method, comprising:

receiving an input/output (I/O) request to write data stored on at least one target device comprised in at least one local storage array; and

generating one or more I/O transactions capable of writing data on at least one target device comprised in at least one remote storage array.

20 9. The method of claim 8, further comprising:

generating at least one of said I/O transactions to mirror data on said local storage array and said remote storage array.

10. The method of claim 8, further comprising:

generating at least one of said I/O transactions to stripe data on said local storage array and said remote storage array.

11. The method of claim 8, further comprising:

receiving an I/O request to read data on said at least one target device comprised
5 in said at least one local storage array; and

generating one or more I/O transactions capable of reading data on said at least one target device comprised in said at least one remote storage array.

12. The method of claim 11, further comprising:

determining the status of said remote storage array, and, if said remote storage
10 array is incapable of transmitting data in response to said one or more I/O transactions, regenerating said one or more I/O transactions to read data to said remote storage array at one or more preselected times.

13. The method of claim 12, further comprising:

storing information based on data unread from said remote storage array on said
15 local storage array, and, retrieving said information based on data unread from said local storage array.

14. The method of claim 8, further comprising:

determining the status of said remote storage array, and, if said remote storage array is incapable of receiving data, regenerating said one or more I/O transactions to
20 write data on said remote storage array at one or more preselected times.

15. The method of claim 14, further comprising:

storing information on said local storage array based on unwritten data related to said I/O transactions to write data to said remote storage array, and, retrieving said

information based on unwritten data from said local storage array and writing said unwritten data to said remote storage array.

16. The method of claim 11, further comprising: copying data from said at least one target device comprised in said at least one remote storage array to said at least one target
5 device comprised in said local storage array.

17. A system, comprising:

a circuit card comprising an integrated circuit capable of communicating in accordance with a plurality of different communication protocols, the circuit card being capable of being coupled to a bus, and said integrated circuit further capable of receiving
10 an input/output (I/O) request to write data stored on at least one target device comprised in at least one local storage array, said integrated circuit further capable of generating one or more I/O transactions capable of writing data on at least one target device comprised in at least one remote storage array.

18. The system of claim 17, wherein:

15 said integrated circuit is further capable of generating one or more I/O transactions capable of writing data stored on said at least one target device comprised in said at least one local storage array.

19. The system of claim 17, wherein:

said local storage array and said remote storage array each comprise a redundant
20 array of inexpensive disks (RAID) each comprising RAID Level 1 storage arrays.

20. The system of claim 19, wherein:

said one or more I/O transactions capable of writing data on at least one target device comprised in at least one remote storage array comprises a transaction to mirror

data on said RAID Level 1 storage array in response to said I/O request to write data stored on at least one target device comprised in at least one local storage array.

21. The system of claim 17, wherein:

5 said local storage array and said remote storage array each comprise a redundant array of inexpensive disks (RAID) each comprising at least one of RAID Level 0, RAID Level 10 and RAID Level 1E storage arrays.

22. The system of claim 21, wherein:

10 said one or more I/O transactions capable of writing data on at least one target device comprised in at least one remote storage array comprises a transaction to stripe data on at least one of said RAID Level 0, RAID Level 10 and RAID Level 1E storage arrays in response to said I/O request to write data stored on at least one target device comprised in at least one local storage array.

23. The system of claim 17, wherein:

15 said integrated circuit further capable of receiving an input/output (I/O) request to read data on at least one target device comprised in at least one local storage array, said integrated circuit further capable of generating one or more I/O transactions capable of reading data on at least one target device comprised in at least one remote storage array.

24. An article comprising:

20 a storage medium having stored thereon instructions that when executed by a machine result in the following operations:

receiving an input/output (I/O) request to write data stored on at least one target device comprised in at least one local storage array; and

generating one or more I/O transactions capable of writing data on at least one target device comprised in at least one remote storage array.

25. The article of claim 24, wherein said instructions that when executed by said machine result in the following additional operations:

5 generating at least one of said I/O transactions to mirror data on said local storage array and said remote storage array.

26. The article of claim 24, wherein said instructions that when executed by said machine result in the following additional operations:

10 generating at least one of said I/O transactions to stripe data on said local storage array and said remote storage array.

27. The article of claim 24, wherein said instructions that when executed by said machine result in the following additional operations:

receiving an I/O request to read data on said at least one target device comprised in said at least one local storage array; and

15 generating one or more I/O transactions capable of reading data on said at least one target device comprised in said at least one remote storage array.

28. The article of claim 27, wherein said instructions that when executed by said machine result in the following additional operations:

20 determining the status of said remote storage array, and, if said remote storage array is incapable of transmitting data in response to said one or more I/O transactions, regenerating said one or more I/O transactions to read data to said remote storage array at one or more preselected times.

29. The article of claim 28, wherein said instructions that when executed by said machine result in the following additional operations:

storing information based on data unread from said remote storage array on said local storage array, and, retrieving said information based on data unread from said local storage array.

30. The article of claim 24, wherein said instructions that when executed by said machine result in the following additional operations:

determining the status of said remote storage array, and, if said remote storage array is incapable of receiving data, regenerating said one or more I/O transactions to write data on said remote storage array at one or more preselected times.

31. The article of claim 30, wherein said instructions that when executed by said machine result in the following additional operations:

storing information on said local storage array based on unwritten data related to said I/O transactions to write data to said remote storage array, and, retrieving said information based on unwritten data from said local storage array and writing said unwritten data to said remote storage array.